

MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The present summary for 1904 is based essentially upon data received from about 166 regular Weather Bureau stations, 33 regular Canadian stations, and from such climate and crop sections as have forwarded their annual summaries in time.

The statistical tables and charts have been prepared under the supervision of Mr. W. B. Stockman, Chief, Division of Meteorological Records, and the summary of flood movements by Dr. H. C. Frankenfield, Professor of Meteorology.

FORECAST DIVISION.

Prof. E. B. GARRIOTT, in charge.

RIVER AND FLOOD SERVICE.

The year 1904, in direct contrast to its immediate predecessor, was remarkably free from severe floods. Only those of January in the Ohio and Susquehanna valleys deserve the appellation of great, and both were due almost entirely to the formation of enormous ice gorges during the severe cold of the early winter, and their subsequent destruction by warm, heavy rains. These gorges were the greatest in the recorded history of their respective localities, and have been fully described in the WEATHER REVIEW for January, February, and March, 1904. They served to introduce a new and very complex element into the work of flood forecasting, for gorges of such magnitude were unprecedented. The field, however, had been most carefully observed and studied, with the result that very timely and effective warnings were issued as often as the situation required.

A considerable increase in the appropriation for its maintenance has permitted a great extension and improvement of the River and Flood Service during the year. The river districts of Columbus, Ohio, Des Moines, Iowa, and Meridian, Miss., were created, together with the necessary number of substations, and existing districts were provided with new stations and equipment and enlarged telegraph and telephone facilities. The State of Kansas and the interior rivers of Ohio are now provided with an adequate flood service, and the districts of Denver, Colo., and Moorhead, Minn., will shortly be established with territory comprising the rivers of Colorado and New Mexico and the Red River of the North, respectively. Several new stations in the upper Missouri watershed are also to be operated in the near future.

In all 101 new special river, and 29 new special rainfall stations have been established during the year. Their names, etc., are enumerated in the following table:

RIVER STATIONS.

<i>District.</i>	<i>Station.</i>	<i>River.</i>
Albany, N. Y.	Tribeshill, N. Y.	Mohawk.
Atlanta, Ga.	Alaga, Ala.	Chattahoochee.
	Bainbridge, Ga.	Flint.
	Columbus, Ga.	Chattahoochee.
	Montezuma, Ga.	Flint.
Cairo, Ill.	Guntersville, Ala.	Tennessee.
	Mount Vernon, Ind.	Ohio.
	Terre Haute, Ind.	Wabash.
	Vincennes, Ind.	Wabash.
Charleston, S. C.	Mount Holly, N. C.	Catawba.
Chattanooga, Tenn.	McGhee, Tenn.	Little Tennessee.
	Tazewell, Tenn.	Powell.
Columbus, Ohio.	Circleville, Ohio.	Scioto.
	Coshocton, Ohio.	Muskingum.
	Defiance, Ohio.	Auglaize.
	Freemont, Ohio.	Sandusky.
	Hamilton, Ohio.	Miami.
	Napoleon, Ohio.	Maumee.
	Piqua, Ohio.	Miami.

RIVER STATIONS—Continued.

<i>District.</i>	<i>Station.</i>	<i>River.</i>
Columbus, Ohio.	Prospect, Ohio.	Scioto.
	Sherwood, Ohio.	Maumee.
	Springfield, Ohio.	Mad.
	Tiffin, Ohio.	Sandusky.
Davenport, Iowa.	Clinton, Iowa.	Mississippi.
	Muscatine, Iowa.	Mississippi.
Des Moines, Iowa.	Boone, Iowa.	Des Moines.
	Fort Dodge, Iowa.	Des Moines.
Fort Smith, Ark.	Calvin, Ind. T.	Canadian.
	Fort Gibson, Ind. T.	Neosho.
	Iola, Kans.	Neosho.
	Neosho Rapids, Kans.	Neosho.
	Oswego, Kans.	Neosho.
	Tulsa, Ind. T.	Arkansas.
Galveston, Tex.	Gonzales, Tex.	Guadalupe.
	Long Lake, Tex.	Trinity.
	Valley Junction, Tex.	Brazos.
	Victoria, Tex.	Guadalupe.
Grand Rapids, Mich.	Eaton Rapids, Mich.	Grand.
	Grand Ledge, Mich.	Grand.
	Ionia, Mich.	Grand.
	Lansing, Mich.	Grand.
	Portland, Mich.	Grand.
Harrisburg, Pa.	Cedar Run, Pa.	Pine.
	Sinnemahoning, Pa.	Sinnemahoning.
Kansas City, Mo.	Abilene, Kans.	Smoky Hill.
	Beloit, Kans.	Solomon.
	Blue Rapids, Kans.	Big Blue.
	Clay Center, Kans.	Republican.
	Lindsborg, Kans.	Smoky Hill.
	Manhattan, Kans.	Kansas.
	Topeka, Kans.	Kansas.
Keokuk, Iowa.	Cedar Rapids, Iowa.	Cedar.
	Iowa City, Iowa.	Iowa.
	Warsaw, Ill.	Mississippi.
Knoxville, Tenn.	Dandridge, Tenn.	French Broad.
	Rotherwood, Tenn.	Holston.
La Crosse, Wis.	Stillwater, Minn.	St. Croix.
Little Rock, Ark.	Batesville, Ark.	White.
	Blackrock, Ark.	Black.
	Calico rock, Ark.	White.
	Clarendon, Ark.	White.
	Jackson, Ky.	Kentucky.
Louisville, Ky.	Milledgeville, Ga.	Oconee.
Macon, Ga.	Luxora, Ark.	Mississippi.
Memphis, Tenn.	Marked Tree, Ark.	St. Francis.
	Columbia, Miss.	Pearl.
Meridian, Miss.	Enterprise, Miss.	Chickasawhay.
	Hattiesburg, Miss.	Leaf.
	Jackson, Miss.	Pearl.
	Merrill, Miss.	Pascagoula.
	Shubuta, Miss.	Chickasawhay.
Minneapolis, Minn.	Mankato, Minn.	Minnesota.
	St. Cloud, Minn.	Mississippi.
Mobile, Ala.	Vienna, Ala.	Tombigbee.
New Orleans, La.	Morgan City, La.	Atchafalaya.
	Simmesport, La.	Atchafalaya.
Omaha, Nebr.	Blair, Nebr.	Missouri.
Parkersburg, W. Va.	St. Marys, Ohio.	Ohio.
Philadelphia, Pa.	Hancock, N. Y.	Delaware (E. Br.).
	Hancock, N. Y.	Delaware (W. Br.).